**DESCRIPTION**

Source  
*E. coli* derived  
Lys22-Lys89  
Accession # P48061

N-terminal Sequence Analysis  
Lys22

Predicted Molecular Mass  
8.0 kDa

**SPECIFICATIONS**

SDS-PAGE  
7 kDa, reducing conditions.

Activity  
Measured by its ability to chemoattract 5-10 day cultured human peripheral blood lymphocytes (PBL).  
The ED_{50} for this effect is 3.9 ng/mL.

Measured by its ability to chemoattract BaF3 mouse pro-B cells transfected with human CXCR4.  
The ED_{50} for this effect is 0.15-0.6 ng/mL.

Endotoxin Level  
<0.01 EU per 1 μg of the protein by the LAL method.

Purity  
>97%, by SDS-PAGE under reducing conditions and visualized by silver stain.

Formulation  
Lyophilized from a 0.2 μm filtered solution in Acetonitrile and TFA with BSA as a carrier protein. See Certificate of Analysis for details.

**PREPARATION AND STORAGE**

Reconstitution  
Reconstitute at 100 μg/mL in sterile PBS containing at least 0.1% human or bovine serum albumin.

Shipping  
The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.

Stability & Storage  
- Use a manual defrost freezer and avoid repeated freeze-thaw cycles.  
- 12 months from date of receipt, -20 to -70 °C as supplied.  
- 1 month, 2 to 8 °C under sterile conditions after reconstitution.  
- 3 months, 20 to 70 °C under sterile conditions after reconstitution.

**DATA**

Bioactivity

![Bioactivity graph](image)

SDS-PAGE

![SDS-PAGE image](image)

1 μg lane of Recombinant Human/Rhesus Macaque CXCL12/SDF-1α was resolved with SDS-PAGE under reducing (R) conditions and visualized by silver staining, showing a single band at 7 kDa.

**BACKGROUND**

SDF-1α and SDF-1β are the first cytokines initially identified using the signal sequence trap cloning strategy from a mouse bone-marrow stromal cell line. These proteins were subsequently also cloned from a human stromal cell line as cytokines that supported the proliferation of a stromal cell-dependent pre-B-cell line. SDF-1α and SDF-1β cDNAs encode precursor proteins of 89 and 93 amino acid residues, respectively. SDF-1α and SDF-1β are encoded by a single gene and arise by alternative splicing. The two proteins are identical except for the four amino acid residues that are present in the carboxy-terminus of SDF-1β and absent from SDF-1α. The amino acid sequence of SDF-1/PBSF identified the protein to be a member of the chemokine α subfamily that lacks the ELR domain. Unlike other known chemokine α and β subfamily members that cluster on chromosomes 4 and 17, respectively, SDF-1/PBSF was mapped to chromosome 10q11.1. SDF-1/PBSF is highly conserved between species, with only one amino acid substitution between the mature human and mouse proteins. SDF-1/PBSF has been found to be a chemoattractant for T-lymphocytes and monocytes, but not neutrophils. SDF-1/PBSF was shown to be a ligand for CXCR4 (fusin/LESTR) receptor that functions as a co-receptor for lymphocyte-tropic HIV-1 strains. SDF-1/PBSF has been found to be a powerful inhibitor of infection by lymphocyte-tropic HIV-1 strains.

**References:**